FORCEnet engineering conference

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PEO C4I and Space Net-Centric S&T Efforts

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Communications and Networking Session

Sponsored by
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What is NESI?

*N*et-centric *E*nterprise Solutions for *I*nteroperability

- **Provides implementation guidance to facilitate the design, development and usage of information systems for net-centric warfare**
- **Cross-Service effort between Air Force (ESC) and Navy (PEO C4I & Space)**
  - DISA and Army have agreed to participate

Better, Cheaper Net-centric Applications to Field Earlier

Net-centric Enterprise Solutions for Interoperability (NESI)

- **6-Volume Document set consisting of *actionable* guidance to help programs deliver net-centric products**
- **Based on:**
  - USAF C2 Enterprise Reference Architecture
  - Navy RAPIDS (component development standards)
  - OSD/NII "Net-Centric Checklist"
  - OSD JTF Modular and Open System Architecture (MOSA)
- **Foundation for Navy OA-based C4I systems**
  - Policy Letter signed by both PEO IWS and PEO C4I and Space

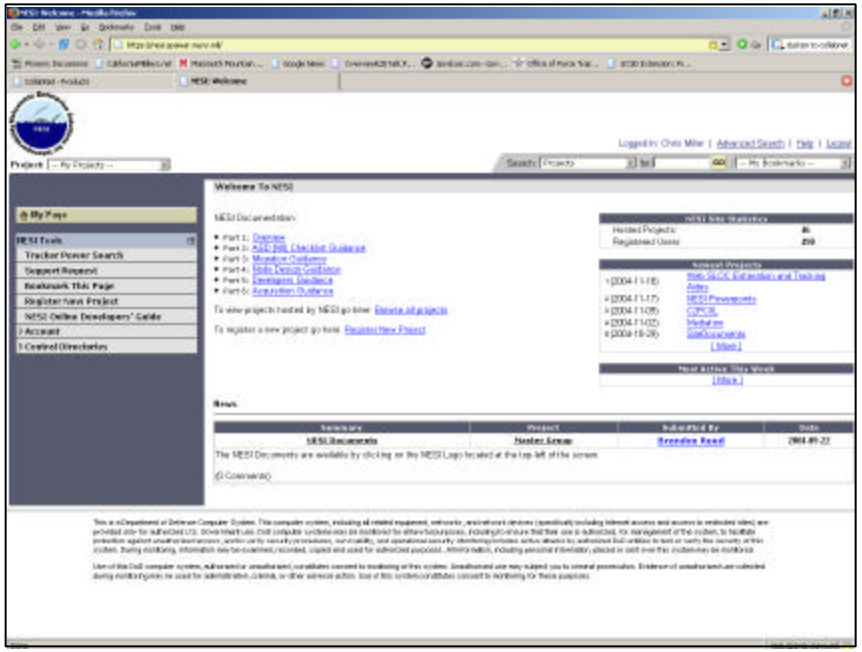
- **Part 1 – Overview**
- **Part 2 – ASD (NII) Net-Centric Checklist Implementation Guidance**
- **Part 3 – Net-Centric Migration Guidance**
- **Part 4 – Node Design Guidance (draft)**
- **Part 5 – Developer's Guidance**
- **Part 6 – Acquisition Guidance**

http://nesipublic.spawar.navy.mil/

NESI Implementation v1.1: 10 June 2005

PEO C4I and Space Collaborative Development Environment

- Community development tool based on industry model
- Source code and documentation repository
- Facilitates distributed development and software reuse
- Allows acceleration of development and reduced costs
- Developing Policy for all future development



“Open source site” URL – https://nesi.spawar.navy.mil/

Session Theme: Distributed Services

- **PEO C4I and Space investments into S&T efforts such as ONR's FNCs, Sea Trial, NII's Horizontal Fusion, DISA's Net-Centric Capabilities Pilot (NCCP) have greatly assisted in shaping our technology roadmap of the future.**
  - Designed to move knowledge and expertise, not people
  - Efforts focused on providing secure, networked, collaborative support systems to assist tactical level warfighters
  - The experience and development from these efforts will enable:
    - Coordinated planning 1
    - Assessment and repair of plans
    - Monitoring of the status of the operations
    - Dynamic re-planning across geographically separated echelons and across security enclaves

S&T efforts are enablers for Net-Centric Warfare Migration

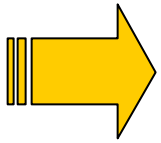
A Snap Shot of S&T Efforts

- C4I Web Services - CWS
- Composeable FORCEnet - CFn
- eXtensible Common Operational Picture - XCOP
- eXtensible Tactical C4I Framework - XTCF
- Geo-Replication Service - GRS
- Integrated Autonomous Network Management – IANM
- BattleSpace Network - BSN
- FORCEnet Services Infrastructure - FSI
- XCraft SOA evaluation

A small glimpse into PEO C4I and Space Net-Centric Efforts

Migration Benefits

- **Resource Impact**
  - Fewer redundant core services
  - Faster acceleration to FORCEnet for legacy systems
  - More practical mechanism for retiring legacy infrastructure
  - Improved Interoperability
  - Reduced Life cycle cost
  - Improved competition
  - Reduced acquisition cycle time



- **Operational Impact**
  - Reconfigureable decision centers
  - Reduced decision cycle time
  - Tailorable mission packages
  - Reduced workload
  - Speed to capability
  - Assured Sharing
  - Distributed operations

Critical Path for FORCEnet

Challenges to Addressed

- Robust, reliable communication to all nodes
- Reliable, accurate and timely information on friendly, environmental, neutral and hostile units
- Storage and retrieval of authoritative data sources
- Robust knowledge management capability
- User-defined and shareable SA
- Automated decision aids to enhance decision making
- Information assurance
- Seamless cross-domain access and data exchange.
- Interoperability across all domains and agencies
- Autonomous and disconnected operations
- Automatic and adaptive diagnostic and repair
- Modular architecture to expedite new capabilities

Must be addressed to be fully Net-Ready

Major Milestones

- Battle Space Network (BSN)
  - FY05 – Negotiate Requirements, Define Incremental builds, Functional Analysis and Allocation
  - FY06 – Requirements Allocation to Functional Baseline, Align Acq strategies and documents from PORs, M&S activities
  - FY07 – PR07 Plus up received, Development and delivery of Network Services and Tactical Mission Applications, Initial Platform Integration
  - FY08 – March 08: DT/OT of Initial BSN capability.

- Common Link Integration Processing (CLIP)
  - FY05 – Award Contract

- GCCS-M 4.1
  - FY05 – Development
  - FY06 – Integration (1st and 2nd Qtr)
  - FY06 – Start Test (3rd Qtr)

- ISNS Increment 2
  - FORCEnet Services Infrastructure (FSI)
    - FY05 – Refine Requirements, evaluation of products
    - FY06 – Identify Lead integrator, Refine FSI Architecture, continue evaluation of products
    - FY07 – DT/OT first FSI release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Questions

Backup Slides

NESI OSS – Getting Started

- Current URL is (at least until security approves the site, then it will be the URL as listed in the tag line on previous slide) https://nesi01.spawar.navy.mil/
- Request an account
  - Link on login page for “Account Request” automated form
- Request access to an existing project
  - Send email to nesi@spawar.navy.mil with your name and the name of the project to which you are requesting access
  - Alternatively, have the government project manager send an email with a list of names of people to be added to the project
- Request a new project to be created
  - Send email to nesi@spawar.navy.mil with your name, sponsoring organization, contact information for the government project manager, and the name of the project

NESI Open Source Site Features

- Separate areas for project files (e.g. executables), project documentation (e.g. manuals), and source code
- Source code is managed via a Source Code Management (SCM) repository using CVS
- All files are backed up and stored on a server as well as periodic backups to CD or other external media
- Files on the OSS have automatic CM that maintains version control and records the complete file history
- Each project has its own Tracker tool that allows a project to monitor change requests, STRs, etc.
  - Each project creates their own “Trackers” via the tool
  - Projects may have multiple Tracker databases

NESI OSS Features continued…

- Projects have their own user discussion Forums
- Projects have their own Task Manager area where project members may be tasked and tasked may be tracked using the Task Manager tool
- Projects may post their own “News” items that appear on the main Project page